

August 9, 2021

Ms. Nancy Rumrill
U.S. Environmental Protection Agency, Region 9
Drinking Water Protection Services, WTR-3-2
75 Hawthorne Street
San Francisco, California 94105

Re: Transmittal of Supplemental Information in Support of Application for Underground Injection Control Permit, Florence Copper Project, Florence, Arizona

Dear Ms. Rumrill:

Pursuant to our telephone conversation on July 22, 2021, Florence Copper Inc. (Florence Copper) herewith transmits supplemental information in response to comments received from U.S. Environmental Protection Agency (USEPA) regarding our Technical Memorandum submitted on March 29, 2021, which describes groundwater model simulations demonstrating the effects of two replacement irrigation wells. This information reflects our understanding of, and response to, questions the USEPA has regarding the previously submitted materials.

Our stated understanding of the additional information required by the USEPA is described below, followed by our response, which includes references to the attached materials. A revised copy of the March 29, 2021, technical memorandum is also attached hereto.

Request 1:

The USEPA requested that Florence Copper explain the difference between porosity values listed in Table 1 of the March 29, 2021 Technical Memorandum and Table A-3 of the application for Underground Injection Control (UIC) Permit Application (Application) submitted on October 4, 2019.

Response 1:

Table A-3 of the Application lists porosity values determined for the bedrock oxide unit at the Production Test Facility based on neutron logging, and these values were applied to the calibrated groundwater flow model during the update conducted in 2019. Table 1 of our March 29, 2021 submittal reflected the range of porosity values used to develop the original model. Table 1 has been updated to reflect the 8 percent porosity values derived from neutron logging which were applied in the updated model. The fluid migration distances cited in our March 29, 2021 submittal reflect the conservative maximum distance of fluid migration observed under each model scenario using the 2019 updated groundwater model. A revised copy of the Technical Memorandum with an updated version of Table 1 is attached.

Request 2:

The USEPA requested that Florence Copper add columns to Table 1 of the Technical Memorandum listing the vertical extent of fluid migration in the exclusion zone, the Lower Basin Fill unit (LBFU), and the total thickness of the LBFU at each well location.

Response 2:

Three columns have been added to Table 1, which include: vertical distance of fluid migration in the exclusion zone, maximum distance of vertical fluid migration in the LBFU, and the total approximate thickness of the LBFU at each injection well location for each of the subject model scenarios. A revised copy of the Technical Memorandum with an updated version of Table 1 is attached.

Request 3:

The USEPA requested that Florence Copper explain why an initial concentration of 10,000 mg/L was selected for the injection fluid in simulations described in the Technical Memorandum.

Response 3:

The initial concentration of 10,000 milligrams per liter (mg/L) was selected for the injection solution because this concentration reflects a typical in-situ copper recovery (ISCR) solution composition and serves as a representative initial solution for the fluid migration analyses described in the Technical Memorandum. This information was added to the attached revised Technical Memorandum.

Request 4:

The USEPA noted that headings in the Technical Memorandum describing 30 day model simulations include the text "30 hours" and that the headings should read "30 Days."

Response 4:

The headings have been corrected to reflect the fact that the model simulations were run for a period of 30 days and are consistent with the text describing the model runs. The subject model runs were conducted for a simulation period of 30 days. The headings have been corrected in the attached revised Technical Memorandum.

Request 5:

The USEPA requested that the thickness of the LBFU at each of the subject wells be provided where the term "full thickness" is used in the Technical Memorandum.

Response 5:

The thickness of the LBFU at each well location has been added to Table 1, and has also been added to the narrative descriptions of the model results for each well. A revised copy of the Technical Memorandum with an updated version of Table 1 is attached.

Please contact me at 520-316-3710 if you require any additional information.

Sincerely,
Florence Copper Inc.



Brent Berg
General Manager

cc: Maribeth Greenslade, Arizona Department of Environmental Quality

ATTACHMENTS